

Research Note

Gastrointestinal Helminths of Some Yellow-shafted Flickers, *Colaptes auratus luteus* (Aves: Picidae), from Allegheny County, Pennsylvania

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ABSTRACT: Five yellow-shafted flickers, *Colaptes auratus luteus*, from Allegheny County, Pennsylvania, were examined for gastrointestinal helminths. The nematodes *Capillaria tridens* and *Dispharynx nasuta* are recorded in this host species for the first time, and new egg measurements are given for *C. tridens*. The acanthocephalan *Plagiorhynchus (Prosthorhynchus) cylindraceus* and an unidentifiable cestode were also found.

KEY WORDS: Yellow-shafted flicker, *Colaptes auratus luteus*, *Capillaria tridens*, *Dispharynx nasuta*, Nematoda, *Plagiorhynchus (Prosthorhynchus) cylindraceus*, Acanthocephala.

The northern flicker, *Colaptes auratus*, is an insectivorous bird that is somewhat abundant throughout its range, including Allegheny County, Pennsylvania. Yet, despite this abundance, there is a paucity of information concerning helminth infections in this species (Table 1), as well as in many other piciforms occurring in North America.

The opportunity to examine 5 yellow-shafted flickers, *Colaptes auratus luteus*, Bangs 1898 became available when they were presented to a local wildlife rehabilitator and subsequently died of unknown causes. Five adults (4 male, 1 female) were collected from July 1995 through November 1996 in Allegheny County (40.46895°N, 079.98119°W), Pennsylvania, and frozen at –20°C until examined for gastrointestinal helminths. Postmortem intervals were 1 wk for 3 specimens and 1 and 3 mo for the remaining birds. Voucher specimens of *C. a. luteus* are deposited in the Carnegie Museum of Natural History, Section of Birds (Pittsburgh, Pennsylvania); #'s T- 20594 through T-20596.

Cestode and acanthocephalan specimens were initially preserved in 10% buffered formalin and AFA fixative, respectively; then, they were transferred to 70% ethyl alcohol, stained in borax- carmine or Mayer's hematoxylin, dehydrated, cleared in xylene, and mounted in Canada

balsam. Nematodes were preserved in 10% buffered formalin and studied as temporary glycerin wet mounts after clearing by the ethyl alcohol and glycerin evaporation technique.

All 5 birds harbored gastrointestinal helminths and were infected with one or more of the following species: *Capillaria tridens* (Dujardin, 1845) (Nematoda: Capillariidae); *Dispharynx nasuta* (Rudin, 1819) (Nematoda: Acuariidae); *Plagiorhynchus (Prosthorhynchus) cylindraceus* (Goeze, 1782) Schmidt and Kuntz, 1966 (Acanthocephala: Plagiorhynchidae); and 1 species of unidentifiable cestode (Cyclophyllidae: Davaineidae). Voucher helminth specimens are deposited in the United States National Parasite Collection, Biosystematic Parasitology Laboratory (U.S. Department of Agriculture, Beltsville, Maryland): *Capillaria tridens* (USNPC # 87117); *Dispharynx nasuta* (USNPC #'s 87118, 87119); *Plagiorhynchus (Prosthorhynchus) cylindraceus* (USNPC # 87120); unidentified cestode (USNPC # 87121).

Capillaria tridens occurred in the proximal half of the small intestine of 2 birds with an intensity of 24 and 73 specimens, and represents a new host and locality record. This report documents *C. tridens* in Pennsylvania for the first time and represents the sixth report of *C. tridens* in North America. This is only the third species of *Capillaria* shown to infect *C. auratus*. *Capillaria tridens* has previously been reported by Durbin (1952) as *Capillaria pirangae* in the scarlet tanager, *Piranga erythromelas*, from Maryland; in the eastern towhee, *Pipilo erythrophthalmus erythrophthalmus*, from Manitoba (Hodasi, 1963); in the brown-headed cowbird, *Molothrus ater ater*, from Ohio (Cooper et al., 1973); in the wild turkey, *Meleagris gallopavo*, from the southeast (Davidson et al., 1975); and Read (1949) reported males of the species in the red-winged blackbird, *Agelaius phoeniceus* from Prairie du Sac, Wisconsin. The capillarids in this

Table 1. Helminths reported from *Colaptes auratus* in North America.

Species	Host	Geographical locality	Reference
Trematoda			
<i>Posthodiplostomum minimum</i> (MacCallum, 1921) Dubois, 1936	<i>C. auratus</i>	Experimental	Palmieri, 1973
Cestoda			
<i>Liga punctata</i> (Weinland, 1856)	<i>C. auratus</i>	Bowie, Maryland	Ransom, 1909
Weinland, 1857; as synonyms <i>Liga brasiliensis</i> and <i>Fuhrmannia brasiliensis</i>	<i>C. a. borealis</i>	Manitoba, Canada	Hodasi, 1963
<i>Raillietina</i> (<i>Paroniella</i>) <i>rhynchota</i> (Ransom, 1909) Fuhrmann, 1920	<i>C. auratus</i>	Nebraska, Iowa, and Maryland	Ransom, 1909
<i>Raillietina</i> (<i>Raillietina</i>) <i>comitata</i> (Ransom, 1909) Fuhrmann, 1920	<i>C. auratus</i>	Nebraska, Iowa, and Maryland	Ransom, 1909
Unidentified cestode (Davaineidae)	<i>C. a. luteus</i>	Allegheny Co., Pennsylvania	This report
Nematoda			
<i>Capillaria longistriata</i> Walton, 1923	<i>C. a. luteus</i>	Monticello, Illinois	Walton, 1923
<i>Capillaria tridens</i> (Dujardin, 1845)	<i>C. a. luteus</i>	Allegheny Co., Pennsylvania	This report
<i>Capillaria venusta</i> (Freitas et Mendoca, 1958); as synonym <i>Thominx venusta</i>	<i>C. a. chrysocaulosus</i>	Baracoa, Soroa, and La Quira, Cuba	Barus, 1971
<i>Diplotrriaena americana</i> Walton, 1927	<i>C. auratus</i>	United States	Walton, 1927
<i>Diplotrriaena</i> sp. Railliet et Henry, 1909	<i>C. a. cafer</i>	Eugene, Oregon	Gullion, 1949
<i>Dispharynx nasuta</i> (Rudin, 1819)	<i>C. a. luteus</i>	Allegheny Co., Pennsylvania	This report
<i>Habronema colaptes</i> Walton, 1923	<i>C. a. luteus</i>	Monticello, Illinois	Walton, 1923
Acanthocephala			
<i>Mediorhynchus centurorum</i> Nickol, 1969	<i>C. auratus</i>	Experimental	Nickol, 1977
<i>Mediorhynchus robustus</i> Van Cleave, 1916	<i>C. a. luteus</i>	Illinois	Van Cleave, 1947
<i>Mediorhynchus</i> sp. Van Cleave, 1916	<i>C. a. cafer</i>	Eugene, Oregon	Gullion, 1949
<i>Plagiorhynchus</i> (<i>Prosthorhyn-</i> <i>chus</i>) <i>cylindraceus</i> (Goeze, 1782) Schmidt and Kuntz, 1966; as synonym <i>Prosthorhynchus</i> <i>formosus</i>	<i>C. auratus</i> <i>C. a. cafer</i> <i>C. a. cafer</i> <i>C. a. luteus</i>	Bowie, Maryland Not specified Washington Allegheny Co., Pennsylvania	Van Cleave, 1918 Schmidt and Olsen, 1964 Schmidt and Neiland, 1966 This report

study concur with the description of *C. tridens* provided by Okulewicz (1991 (1992)) collected from the great tit, *Parus major*, in Poland. However, the eggs from the present specimens have a greater range in size than described for the species by Okulewicz (1991 (1992)). Measurements of 48 eggs from gravid *C. tridens* collected from *C. auratus* are 55–70 μm (mean 64.1) long by 22.5–30 μm (mean 28.1) wide.

The acuariid nematode *D. nasuta* was collected from the proventricular mucosa of 2 birds

that harbored 12 and 27 specimens and is reported in *C. auratus* for the first time. This species has been documented numerous times, primarily in a variety of colubiform, galliform, and passeriform birds (Goble and Kutz, 1945; Martinez-Moreno et al., 1989 (1990); Silva et al., 1990), but it has also been reported in the piciforms (Barus, 1971).

Plagiorhynchus (*P.*) *cylindraceus* was found in 2 of the birds examined and constitutes a new locality record for the species. Intensity of in-

fection was 1 and 7 specimens. This plagiorhynchid has been formerly documented in *C. auratus* as its synonym *Plagiorhynchus formosus* (Van Cleave, 1918; Schmidt and Olsen, 1964; Schmidt and Neiland, 1966). An unidentifiable cestode species (Davaineidae) occurred in 3 birds with an intensity of 2–21 (mean 8.7) specimens per host. A specific genus or species could not be determined because adequate staining could not be obtained. This may be attributed to the specimens being previously frozen within the host. However, they likely represent a species of *Raillietina*, based on minimal ascertainable features.

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Literature Cited

- Barus, V. 1971. A survey of parasitic nematodes of piciform birds in Cuba. *Folia Parasitologica* 18: 315–321.
- Cooper, C. L., E. L. Troutman, and J. L. Crites. 1973. Helminth parasites of the brown-headed cowbird, *Molothrus ater ater*, from Ohio. *Ohio Journal of Science* 73:376–380.
- Davidson, W. R., F. E. Kellogg, and G. L. Doster. 1975. *Capillaria tridens* (Dujardin 1845) Travassos 1915, from wild turkeys (*Meleagris gallopavo*) in the southeastern United States. *Journal of Parasitology* 61:1115.
- Durbin, C. G. 1952. A new roundworm, *Capillaria pirangae* (Nematoda: Trichinellidae), from the scarlet tanager, *Piranga erythromelas*. *Journal of the Washington Academy of Sciences* 42:238–239.
- Goble, F. C., and H. L. Kutz. 1945. The genus *Dispharynx* (Nematoda: Acuariidae) in galliform and passeriform birds. *Journal of Parasitology* 31:323–331.
- Gullion, G. W. 1949. A heavily parasitized flicker. *Condor* 51:232.
- Hodasi, J. K. M. 1963. Helminths from Manitoba birds. *Canadian Journal of Zoology* 41:1227–1231.
- Martinez-Moreno, F. J., A. Martinez-Moreno, C. Becerra-Martell, and M. S. Martinez-Cruz. 1989 (1990). Parasitofauna of pigeon (*Columba livia*) in the province of Cordoba (Spain). *Revista Iberica de Parasitologia* 49:279–282.
- Nickol, B. B. 1977. Life history and host specificity of *Mediorhynchus centurorum* Nickol 1969 (Acanthocephala: Gigantorhynchidae). *Journal of Parasitology* 63:104–111.
- Okulewicz, A. 1991 (1992). Pasożytnicze nicienie sikor (Paridae) W Polsce. *Wiadomości Parazytologiczne* 37:491–498.
- Palmieri, J. R. 1973. Additional natural and experimental hosts and intraspecific variation in *Posthodiplostomum minimum* (Trematoda: Diplostomatidae). *Journal of Parasitology* 59:744–746.
- Ransom, B. H. 1909. The taenioid cestodes of North American birds. *Bulletin of the United States National Museum* 69:1–141.
- Read, C. P. 1949. Studies on North American helminths of the genus *Capillaria* Zeder, 1800 (Nematoda): III. Capillarids from the lower digestive tract of North American birds. *Journal of Parasitology* 35:240–249.
- Schmidt, G. D., and K. A. Neiland. 1966. New host and distribution records of Acanthocephala from North American birds. *Bulletin of the Wildlife Disease Association* 2:78.
- , and O. W. Olsen. 1964. Life cycle and development of *Prosthynchus formosus* (Van Cleave, 1918) Travassos, 1926, an acanthocephalan parasite of birds. *Journal of Parasitology* 50: 721–730.
- Silva, C. C. D., D. G. D. Mattos, Jr., and P. M. Ramires. 1990. Helminth parasites of *Columba livia* (Gm) in Sao Goncalo, Rio de Janeiro, Brazil. *Arquivo Brasileiro de Medicina Veterinaria e Zootecnia* 42:391–394.
- Van Cleave, H. J. 1918. The Acanthocephala of North American birds. *Transactions of the American Microscopical Society* 37:19–47.
- . 1947. The acanthocephalan genus *Mediorhynchus*, its history and a review of the species occurring in the United States. *Journal of Parasitology* 33:297–315.
- Walton, A. C. 1923. Some new and little known nematodes. *Journal of Parasitology* 10:59–70.
- . 1927. A revision of the nematodes of the Leidy collection. *Proceedings of the Academy of Natural Sciences of Philadelphia* 79:49–163.